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Appellants:	Troy Michael Runge et al.	Docket No.:	16,670
Serial No.:	09/800,645	Group:	1731
Confirmation No:	5221	Examiner:	M. Halpern
Filed:	March 7, 2001	Date:	May 19, 2006

For: METHOD FOR APPLYING CHEMICAL ADDITIVES TO PULP DURING THE PULP PROCESSING AND PRODUCTS MADE BY SAID METHOD

Revised Brief on Appeal to the Board of Patent Appeals and Interferences

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Sir:

In response to the Notification of Non-Compliant Appeal Brief mailed April 28, 2006, Appellants respectfully submit this Revised Appeal Brief in support of their appeal of the **Final Rejection** of claims 1-6; 8-19; 22-33 and 77-79 which was mailed on September 23, 2005.

Previously, on December 19, 2005, Appellants, pursuant to 37 C.F.R. 41.31 mailed a timely Notice of Appeal. The time period for filing the original Appeal Brief ended on February 19, 2006. Appellants' Appeal Brief was filed on February 15, 2006.

Real Party in Interest

The present Application has been assigned to the Kimberly-Clark Worldwide, Inc.

Related Appeals and Interferences

There are no known related appeals and/or interferences.

Status of the Claims

Claims 1-6; 8-19; 22-33 and 77-79 remain in the application with claims 1-6; 8-19; 22-33 and 77-79 being finally rejected and the claims on appeal. No claims have been withdrawn and claims 7; 20-21 and 34-76 have been cancelled.

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Status of Amendments Filed Subsequent to Final Rejection

No Amendments have been filed subsequent to Final Rejection.

Summary of Claimed Subject Matter

The invention of independent Claim 1 resides in a method for applying chemical additives to the pulp fibers. The method comprises creating a fiber slurry comprising water and pulp fibers (see specification at page 2, lines 35-36). The fiber slurry 10 (Figure 1) is formed into a wet fibrous web 32 (Figure 1) using a web forming apparatus 30 (Figure 1) and the wet fibrous web is dewatered to a predetermined consistency, forming a dewatered fibrous web (see specification at page 2, line 36 to page 3, line 3 and press section 44 of Figure 1). A chemical additive 24 (Figure 1) is applied to the dewatered fibrous web 32, thereby forming a chemically treated dewatered fibrous web (see specification at page 3, lines 2-3). The chemically treated dewatered fibrous web contains chemically treated pulp fibers that have retained from between 10 to about 100 percent of the applied amount of the chemical additive when the chemically treated pulp fibers are redispersed in water (see specification at page 3, lines 6-9).

The invention of independent Claim 22 resides in a method for applying a chemical additive to pulp fiber. The method comprises mixing pulp fibers with process water to form a fiber slurry (see specification at page 3, lines 11-13). The fiber slurry 10 (Figure 1) is then transported to a web-forming apparatus 30 (Figure 1) of a pulp sheet machine and a wet fibrous web 32 (Figure 1) is formed (see specification at page 3, line 13). The wet fibrous web is dewatered to a predetermined consistency, thereby forming a dewatered fibrous web 33 (Figure 1) (see specification at page 3, lines 14-15). A chemical additive 35c (Figure 1) is applied to the dried fibrous web, thereby forming a chemically treated dried fibrous web (see specification at page 3, lines 18-19). The chemically treated dried fibrous web contains chemically treated pulp fibers that have retained from between 10 to about 100 percent of the applied amount of the chemical additive when the chemically treated pulp fibers are redispersed in water (see specification at page 3, lines 19-22).

The invention of dependent claims 2, 23 and 27-30 provides for dispersing the chemically treated fibers in water on a paper machine (see specification at page 8, lines 21-24 and Figure 3, reference numeral 49)

The invention of dependent claim 10 provides that the chemical additive of claim 1 is a softener (see specification at page 10, lines 25-34).

The invention of dependent claims 3, 6, 24 and 26 provide for a z-directional gradient of the chemical additive within the fibrous web (see specification at page 21, lines 21-35 and page 22, lines 1-24).

Statement of Each Ground of Rejection Presented For Review

Claims 1-2; 4-5; 8-19; 22-23; 25; 27-33 and 77-79 stand finally rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. 5,547,541 to Hansen et al..

Claims 3, 6, 24 and 26 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 5,547,541 to Hansen et al. in view of U.S. 3,556,931 to Champaigne.

Argument

Briefly, Appellants have discovered that chemical additives, particularly softening agents, can be applied to papermaking pulp fibers during the pulp sheet manufacturing process (prior to the ultimate papermaking process) such that a substantial amount of the chemical additives is retained by the pulp fibers even when the pulp fibers are thereafter redispersed in water for making a paper product, such as tissue.

Directing attention to the grounds for final rejection, claims 1-2, 4-5, 8-19, 22-23, 25, 27-33 and 77-79 stand finally rejected under 35 U.S.C. 103(a) as being anticipated by or, in the alternative, as being obvious in view of U.S. 5,547,541 to Hansen et al.. Hansen et al. discloses a method of forming dry cellulose fibers containing superabsorbent particles for use in absorbent products such as diapers. Cellulose fibers are treated with a binder material that forms hydrogen bonds with the hydroxyl groups of the cellulose fibers. The binder material in turn binds to the superabsorbent particles. The binder material and superabsorbent particles can be applied to pulp sheets, which are then dry fiberized, or the superabsorbent particles can be added after the binder-treated pulp sheets are fiberized. (See col. 5, lines 12-21, and col. 9, lines 41-67 and col. 10, lines 1-9).

First with regard to the anticipation rejection of independent claims 1 and 22, Hansen et al. pertains to an entirely different process and is not directed to forming pulp sheets for subsequent papermaking. More particularly, Hansen et al. does not disclose dispersing chemically-treated pulp fibers in water and thereafter draining the water from the chemically treated pulp fibers as claimed by Appellants in step (e) of independent claim 1 and step (e) of independent claim 22. As shown in Figures 1 and 2 of Hansen et al., Hansen et al. merely adds a binder material to a cellulose web (reference numbers 50 of Figure 1) and thereafter adds superabsorbent particles to the dried cellulose sheet (reference number 72 of Figure 2). The resulting superabsorbent-containing sheet is intended

for subsequent use in an absorbent article, such as a diaper. Hansen et al. does not disclose dispersing the binder-containing cellulose sheet or the superabsorbent-containing cellulose sheet in water and thereafter draining the water from the fibers as claimed by Appellants. Therefore there is no anticipation of independent claims 1 and 22 (and their respective dependent claims).

With regard to the obviousness rejection of independent claims 1 and 22 based on Hansen et al., there is no suggestion by Hansen et al. to disperse the binder-treated sheets (reference number 32 of Figure 1) or the superabsorbent-containing sheets (reference number 92 of Figure 2) in water, in part because the binder materials of Hansen et al. bind to the cellulose fibers with hydrogen bonds. Subsequent dispersion of the binder-treated fibers of Hansen et al. in water would break the hydrogen bonds between the binder and the fibers and undo what Hansen et al. is trying to accomplish. Moreover, dispersing the sheets would serve no useful purpose in the context of Hansen et al. since Hansen et al simply wants to add superabsorbent particles to the binder-treated sheet . Therefore it would not be obvious from the teachings of Hansen et al. to disperse the binder-treated sheets in water. Similarly, for the final superabsorbent-containing sheets of Hansen et al., any dispersal of the sheets in water would result in swelling of the superabsorbent particles and render the sheet useless for its intended purpose. Therefore it would not be obvious to disperse any of the sheets of Hansen et al. in water and drain the water as claimed by Appellants.

Regarding dependent claims 2 , 23, and 27-30, which pertain to dipersing the chemically treated pulp fibers on a paper machine, there is no suggestion or teaching by Hansen et al. to subsequently use the chemically treated fibers on a papermaking machine.

Regarding dependent claim 10 , which pertains to the use of a softener, there is no suggestion or teaching by Hansen et al. to substitute a softener for the binder in the sheets produced in Figure 1 of Hansen et al.

Claims 3, 6, 24 and 26, which generally pertain to providing a z-directional gradient of the chemical additive within the fibrous web, stand rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. in view of U.S. 3,556,931 to Champaigne. Hansen et al has been described above. Champaigne teaches spraying debonder onto the surface of a cellulose batt of fibers to create a soft outer zone and a more dense absorbent inner zone. It is asserted that by combining the teachings of Hansen et al. with those of Champaigne, it would be obvious to provide Appellants' chemically treated web with a z-directional gradient. However, as stated above, the primary reference (Hansen et al.) does not teach or suggest dispersing a chemically treated web in water after the chemical additive has been incorporated into the web and thereafter draining the water from the dispersed fibers. For this reason alone, assuming the teachings of the two references are properly combinable, the subject matter of claims 3, 6, 24 and 26 is still not obvious from the teachings of Hansen et al. and

Champaigne. Further in this regard, there also is no suggestion from the teachings of Champaigne to disperse the debonder-containing batt of fibers in water and thereafter drain the water from the resulting fibers. Therefore the combined teachings of Hansen et al. and Champaigne do not make the subject matter of claims 3, 6, 24 and 26 obvious.

Furthermore, it would not make sense to substitute the debonder of Champaigne for the binder material of Hansen et al. and there is no incentive to apply the binder material of Hansen et al. in a manner that results in a z-directional gradient as taught by Champaigne. The binder material of Hansen et al. serves to bind the subsequently added superabsorbent particles within the final fluff batt, which is formed by fiberization of the binder-treated sheet and air-laying the resulting fibers. Any gradient in the application of the binder material would be lost during the subsequent fiberization step.

Conclusion

For all of the reasons stated above, it is Appellants' position that the Examiner's final rejection of claims 1-6; 8-19; 22-23 and 77-79 is not proper and should be reversed by the Board.

Please charge the $500.00 fee (fee code 1402), pursuant to 37 C.F.R. 41.20(b)(2), for filing this Appeal Brief to Kimberly-Clark Worldwide, Inc. deposit account number 11-0875. Any additional prosecutional fees which are due may also be charged to deposit account number 11-0875.

The undersigned may be reached at: (920) 721-3616.

Respectfully submitted,
TROY MICHAEL RUNGE ET AL.

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CERTIFICATE OF TRANSMISSION

I, Judy Garot, hereby certify that on May 19, 2006 this document is being facsimile transmitted to the United States Patent and Trademark Office, Fax No. (571) 273-8300.

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Appendix – The Claims On Appeal

The claims on appeal are:

1. (Previously Presented) A method for preparing chemically treated pulp fiber comprising:

a) creating a fiber slurry comprising process water and pulp fibers;

b) transporting said fiber slurry to a web-forming apparatus of a pulp sheet machine and forming a wet fibrous web;

c) drying said wet fibrous web to a predetermined consistency thereby forming a dried fibrous web;

d) treating said dried fibrous web with an applied amount of a chemical additive thereby forming a chemically treated dried fibrous web containing chemically treated pulp fibers; and

(e) dispersing the chemically treated pulp fibers of the chemically treated dried fibrous web in water and draining the water from the chemically treated pulp fibers, wherein said chemically treated pulp fibers retain from between about 10 to about 100 percent of the applied amount of said chemical additive.

2. (Previously Presented) The method of Claim 1 wherein the chemically treated fibers are dispersed in water on a paper machine.

3. (Previously Presented) The method of Claim 1, wherein said dried chemically treated fibrous web includes a z-direction gradient of said chemical additive.

4. (Previously Presented) The method of Claim 1, further comprising dewatering said wet fibrous web thereby forming a dewatered fibrous web.

5. (Previously Presented) The method of Claim 4, further comprising drying said dewatered fibrous web thereby forming a dried fibrous web.

6. (Previously Presented) The method of Claim 5, wherein said chemically treated dewatered fibrous web includes a z-direction gradient of said chemical additive.

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8. (Previously Presented) The method of Claim 1 or 2, wherein said chemical additive is selected from the group comprising softening agents, dry strength agents, wet strength agents, opacifying agents, dyes, debonding agents, adsorbency agents, sizing agents, optical brighteners, chemical tracers, and mixtures thereof.

9. (Original) The method of Claim 8, wherein said softener is selected from the group consisting of quaternary ammonium compounds, quaternized protein compounds, phospholipids, silicone quaternaries, quaternized, hydrolyzed wheat protein/dimethicone phosphocopolyol copolymer, organoreactive polysiloxanes, polyhydroxy compounds, and silicone gylcols.

10. (Previously Presented) The method of Claim 1 or 2, wherein said chemical additive is a softener.

11. (Previously Presented) The method of Claim 1 or 2, wherein said chemical additive is an absorbency agent.

12. (Previously Presented) The method of Claim 1 or 2, wherein said chemical additive is a wet strength agent.

13. (Previously Presented) The method of Claim 1 or 2, wherein said chemical additive is a dry strength agent.

14. (Original) The method of Claim 1, further comprising creating a chemically treated pulp fiber slurry by redispersing said chemically treated dried fibrous web in water.

15. (Original) The method of Claim 1, wherein said chemical additive is applied to said dried fibrous web in an amount of at least about 0.1 kilograms per metric ton or greater.

16. (Original) The method of Claim 1, wherein said dried fibrous web has a consistency ranging from about 65 percent to about 100 percent.

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17. (Original) The method of Claim 1, wherein said dried fibrous web has a consistency ranging from about 85 percent to about 95 percent.

18. (Original) The method of Claim 1, wherein sufficient residence time is provided after said chemical additive is applied to said dried fibrous web to allow for retention of said chemical additive by said pulp fiber of said dried fibrous web.

19. (Original) The method of Claim 1, further comprising forming a paper or tissue product from said chemically treated dried fibrous web.

20.-21. Canceled

22. (Previously Presented) A method for applying a chemical additive to pulp fiber, said method comprising:

a) mixing pulp fibers with process water to form a fiber slurry;

b) transporting said fiber slurry to a web-forming apparatus of a pulp sheet machine and forming a wet fibrous web;

c) dewatering said wet fibrous web to a predetermined consistency thereby forming a dewatered fibrous web;

d) applying an amount of a chemical additive to said dewatered fibrous web thereby forming a chemically treated dewatered fibrous web of chemically treated pulp fibers; and

(e) dispersing the chemically treated pulp fibers of the chemically treated dewatered fibrous web in water and draining the water from the chemically treated pulp fibers, wherein said chemically treated pulp fibers retain from between about 10 to about 100 percent of the applied amount of said chemical additive.

23. (Previously Presented) The method of Claim 22 wherein the chemically treated pulp fibers are dispersed in water on a paper machine.

24. (Original) The method of Claim 22, wherein said chemically treated dried fibrous web includes a gradient of said chemical additive.

25. (Original) The method of Claim 22, further comprising drying said chemically treated dewatered fibrous web to a predetermined consistency thereby forming a chemically treated dried fibrous web.

26. (Original) The method of Claim 25, wherein said chemically treated dewatered fibrous web includes a gradient of said chemical additive.

27. (Original) The method of Claim 25, further comprising transporting said chemically treated dried fibrous web to a paper machine and mixing said dried fibrous web with water thereby forming a chemically treated pulp fiber slurry, wherein said chemically treated pulp slurry containing chemically treated pulp fibers having said chemical additive retained thereby.

28. (Original) The method of Claim 27, further comprising transporting said chemically treated pulp fiber slurry through said paper machine to form a finished paper or tissue product having enhanced quality due to the retention of said chemical additive by said chemically treated pulp fibers.

29. (Original) The method of Claim 27, wherein the amount of said chemical additive retained by said chemically treated pulp fibers is about 0.1 kilogram per metric ton or greater, and the amount of unretained said chemical additive in said water is between 0 and about 50 percent of the applied amount of said chemical additive retained by said chemically treated dewatered fibrous web when said chemically treated pulp fibers are redispersed in water.

30. (Original) The method of Claim 22, wherein the amount of said chemical additive applied to said dewatered fibrous web is about 1 kilograms per metric ton or greater.

31. (Original) The method of Claim 22, wherein the amount of said chemical additive applied to said dewatered fibrous web is about 3 kilograms per metric ton or greater.

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32. (Previously Presented) The method of Claim 22, wherein the amount of said chemical additive applied to said dewatered fibrous web is from about 0.1 to about 5 kilograms per metric ton.

33. (Original) The method of Claim 22, wherein said chemical additive is selected from the group comprising softening agents, dry strength agents, wet strength agents, opacifying agents, dyes, debonding agents, absorbency agents, sizing agents, optical brighteners, chemical tracers, and mixtures thereof.

34.-76. Canceled

77. (Previously Presented) The method of Claim 1 wherein the amount of said chemical additive applied to said dried fibrous web is from about 0.1 to about 5 kilograms per metric ton.

78. (Previously Presented) The method of claim 1 wherein the amount of said chemical additive applied to said dried fibrous web is from about 1.5 to about 7.4 kilograms per metric ton.

79. (Previously Presented) The method of Claim 22 wherein the amount of said chemical additive applied to said dried fibrous web is from about 1.5 to about 7.4 kilograms per metric ton.

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Evidence Appendix

Not applicable in this matter.

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Related Proceedings Appendix

There are no known related proceedings.